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## SOME OBSERVATIONS ON INFLUENZAL NEURITIS.

BY EDWARD W. WATSON, M.D.

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THE field of influenza is almost inexhaustible. Some portions of it have received far more attention than others. If any part can be said to have been neglected it seems to be that of neuritis, in which we have often the most notable failures, and in which also there possibly lies concealed the secret of its pathology and the clue to its mystery.

The different nerve affections of this disease might, if we chose, be divided into three main divisions—general nerve irritation, local functional disturbances, and local neuritis. We might consider the general aching and pain which marks the onset as the first. Functional neuroses may be met with at any period of an attack, but localized neurites are rather sequelæ than early symptoms.

Now, the main question at issue is, whether in a localized neuritis the peculiar process gains special access to the separate nerves, or even to the nervous system generally; or whether in all influenza, as shown by its initial symptoms, the nervous system is always the seat of such process, though in so benign a degree as to escape notice; or, as a third view, whether while the nervous system is always invaded the nerves of organic life are not generally the principal sufferers, and those of voluntary motion are least and so escape notice?

We should premise that influenza, even in its acute epidemic form, is in all probability a much longer disease than is generally supposed. Early recoveries from pulmonary and abdominal forms are such only in seeming, as shown by the lingering character of the recovery and the long period during which tonics and stimulants often fail to overcome the exhaustion and inertia. Further, in general, when recovery

from acute disease sets in, the whole world brightens to the convalescent, sleep restores, food nourishes, and tonics tone; but after acute influenza there is a long period of semi-recovery—a lethargy of the system in which remedies fail to act.

Now, if in such a case of supposed convalescence exertion, exposure, anxiety are endured, we have, if early in the case, a so-called relapse or more properly a recurrence in some new organ or structure, generally internal; but if later in the convalescence, we are more likely to have an external peripheral neuritis. A central neuritis may at times occur, as in the unfortunately frequent heart failures; but more commonly if walking has been excessive we find a sciatica, or an extension of the disease in the line of the sciatic to the calf, heel, or toe. Where the arms have been overstrained in gymnastics, reaching, lifting, driving, we find a brachial neuritis—generally descending from the shoulder. These attacks should be discriminated from those muscular pains which appear much earlier in muscles in the neighborhood of organs affected by influenzal catarrhs, as the trifacial in coryza, the region of the neck in catarrhal pharyngitis, lumbar pains in renal catarrh, epigastric pain after gastritis, etc.

Of the external neurites the brachial is the most common. This occurred in nearly one-half of my cases; then in order of frequency came the intercostal, sciatic, lumbar, epigastric, cervical, lower abdominal. The onset of the brachial attack is generally sudden, and often at the first the disease seems reluctant to locate, the pains radiating in the neck and thorax, axilla, and down the arm; soon, however, the painful point will be found quite fixed on the anterior aspect of the head of the humerus (shoulder). Associated with the pain come numbness and tingling in the course of the nerve, and the shifting character of the numbness, etc., from radial to ulnar distribution, or *vice versa*, shows how intermittent is the obstruction and interference with the nerve current (action). These shifting sensations are by no means to be taken as indicating that the active process has extended to the fingers, but that where located it obstructs or interferes with certain nerve fibres distributed to the fingers.

The actual discernible alteration in the course of the nerve is found most frequently in the region of the biceps, though painful points can at times be made out at and below the elbow. The biceps, however, most frequently in protracted cases hardens with a doughy hardness and enlarges. In unfavorable cases it afterward wastes very considerably. Similar wasting has been observed in other

regions where other nerves are in like manner affected. We are inclined to believe that if proper care be early taken the condition tends to somewhat rapid recovery, but when the arm is used to any extent, and where with this there exists a gouty history or a gouty inheritance, under undue effort and imperfect nerve-supply, the muscles go into a state of tonic spasm or contraction and the nerve exhausted in its efforts to transmit the force demanded becomes locally still more involved; rarely an eruption of shingles occurs in the course of the affected nerves.

We may as well admit that this condition is somewhat beyond direct and positive therapeutic aid; how serious the condition of the nerve may at times become has been of late shown by careful post-mortem examination. How very hopeless the restoration of function may be, is shown in the series of cases reported by Dr. Ferguson, of Toronto, in the *Medical News* of January 6th of this year (1894), for although no mention is made by him of the fact that his cases were any of them of influenzal origin—though he mentions in one case that influenza had preceded—I think that at least three of the five bear evident marks of being due to that cause. Again, a study of the behavior of these diseased nerves under certain circumstances, tends to throw a partial light into the general gloom. Again and again after applying the interrupted current the pain has been rapidly relieved, but within a few hours a more violent attack has occurred in a more important (and serious) locality—from the arm to the lumbar spine, to the cervical region, to the precordial region, to the other arm; sometimes exhaustion and faintness; sometimes intermittent pulse has been noticed. The same experience has been encountered in the employment of massage of the affected arm, while in other cases in later stages, or in the same case later in its course, both agents have been of the greatest service and conducted to permanent recovery. In three cases long localized pain in the epigastric and abdominal regions has yielded at once and permanently to one short application of the battery.

It would be well also to notice those cases of intra-thoracic and intra-abdominal neuritis attended with much more threatening symptoms, where change of position leads to failure of pulse and loss of consciousness, or to profound nausea, or to respiratory failure, which as they gradually recover seem to do so by an exodus of the morbid condition from within to without; where an emerging neuritis of arm or leg seems the surest harbinger of escape from a fatal illness. The influenzal process seeming to traverse deep-seated and vitally

important centres and nerve trunks and emerge to those of less vital moment. This has been a somewhat common termination of many cases of apparent neurasthenia, which should, however, be discriminated from the neurasthenia with which we have of late years—before the influenza epidemic—become so unfortunately familiar, for between them there lies a great difference. In either case the patient is neurasthenic, but has arrived at that condition by quite a different road. The typical neurasthenic has exhausted centres, and I believe may have injured nerve trunks even, by excessive and prolonged exertion or sudden overstrain. The influenzal neurasthenic has the nerve centres, perhaps the communicating nerve trunks, certainly occupied and rendered useless for a longer or a shorter time by a progressing disease. In the former case it is but necessary to accumulate force and cause its conveyance to mechanism which we put in the best possible order; while in the latter case we must await the disappearance of the disease before we can hope for improvement; this I think supplies the reason for the behavior of the patient under massage and electricity.

In summing up therapeutic results, I can say that rest is an absolute necessity; that electricity has benefited many cases, generally ones of long standing, but has injured, at least for a time, many early cases; and that massage, though less powerful for good, has been only less powerful for evil; while counter-irritation has been disappointing, and repeated blistering has repeatedly failed.

In the early days of the attack heat has been often valuable, where the whole limb could be enveloped in moist heat as by fomentation, or swathed in hot flannels, or placed in hot water. But no drug has given reliable results. When improvement has been most pronounced, then relapse and disappointment have been most certain. If to this sweeping statement there be any exception, it is in favor of arsenic in very small doses frequently repeated. Of general systemic treatment, such as strychnine and phosphorus, quinine and alcohol, and cod-liver oil, I am not speaking—these may generally benefit the patient, appetite may increase with assimilation, strength and the general appearance of health may return, but the arm or leg be much the same. Mercuric bichloride, iodides, and bromides have given no results; salicylates and salicin have failed to relieve—they may have prevented. Morphine pushed continuously has seemed to shorten the attack in many cases if given early, possibly by enforcing that rest which is so vitally important to cure; atropine, which

controls some of the manifestations of nerve disorder, as the chilliness, excessive sweating, and the pulmonary conditions, is a failure in the neuritis under consideration. Hypodermatics of atropine in the painful points or into the affected muscles (*biceps itself*) have given no good results. Locally, belladonna, menthol, ichthyol, and mercurial ointment have been used with apparent benefit. But viewed in the most cheerful light treatment is unsatisfactory, and prevention is better than cure. Prevention—if the ideas expressed in this paper are correct—by early and continuous rest continued long enough to allow the system to react and the disease to naturally terminate; and when exercise is permitted, with such restriction as to avoid tire, general or local, and this will require such confidence on the part of the patient, and such an education on his or her part also, that it will, I fear, be long before the disease is banished by preventive measures.

The treatment of an internal neuritis of a nerve supplying a vital organ resolves itself into a treatment, so far as possible, of the organ involved. To take one case as an illustration—the stomach. All are familiar with the fact that digestive difficulties have been unusually frequent of late; they have taken the form of delayed digestion, with emesis, pyrosis, and eructations. In the majority of these we have found the difficulty to culminate at night, to be least in the early morning. All of them if carefully questioned will give a history of influenza as a starting-point, generally influenza of the gastric form, though perhaps not recognized as such by the patient; they go back to an attack of chilliness and fever with vomiting, fever with loss of appetite, fever with diarrhoea. Following these there will often be a history of gastric pains excited by food; often a distinct account of a peculiar pain or mild gastric pang coming on at short intervals after eating, and peculiar in that it starts in the region of the pylorus and travels in a wave or thrill in the direction of the greater curvature from right to left, dying out gradually as it travels, only to be followed by a succession of such pains. As these pains diminish with days and weeks the patient discovers that he has dyspepsia, and if appetite returns he begins soon to suffer after meals in a different way with acute indigestion. After a time the gastric soreness is almost continuous, and nights and days are passed in great distress, and speedily weakness and emaciation occur. Now, these cases seem to be due, judging by analogy, to a condition of the pneumogastrics or splanchnics similar to what we have been noticing in external nerves,

a long-continued state of diminished action of the gastric muscles, owing to their supplying nerves having been occluded or interfered with by influenzal disease.

Those who have attempted to relieve these cases (which show no evidences of dilatation and rarely of any gastric catarrh) will bear witness to the general uselessness of the old lines of treatment and the new ones as well. They resemble cases of dilated stomach with pyloric obstruction, but are most probably atonic stomachs with normal pylori, in which the force of contraction is insufficient to expel the digested food, or where the almost unknown nervous mechanism of the pylorus is in some way at fault.

When this condition has become aggravated and distress is constant, washing out the stomach will undoubtedly give relief, but acids, alkalies and bitters, pepsin and peptonized foods avail little. From careful observation of the general condition, the observer must be led to conclude that a defective innervation and consequent painful and feeble action of the stomach is the real difficulty, and that the retention of food too long leads to the formation of digestive products toxic to the economy and irritant to the organ itself. Intense irritability is often shown by emesis where the matter ejected seems quite normal; faulty innervation by the cases when digestion can go on normally for days in the recumbent position, but where the patient on assuming the upright or sitting posture invariably vomits after a definite period of time—half an hour or an hour. That increased irritability is one cause of the delay and distress is shown by the character of the only drugs which seem to afford relief. Chloroform, cocaine, bismuth, alcohol, and the bromides—these, especially the latter, will in many cases restore appetite, relieve distress, and banish indigestion; but when they fail we seem left with but one alternative other than washing out the stomach, viz., to give the organ as long and continuous a rest in the twenty-four hours as is possible, in order that it may store up power enough and free itself. This gives immediate relief and so is willingly pursued by the patient.

As a formulated plan of treatment, it is best to begin with twenty-four hours of semi-starvation, interdicting all food except a gill of hot milk three times in the first day; on the next day ordinary diet can be given in full amount at the morning and noon meals, but after 2 P.M. nothing until the next morning at breakfast. In a few days the appetite will accommodate itself to the circumstances. The stomach relieved and free from pain does its work in better time and manner, and emaciation ceases and weight is rapidly regained. The

weight of the patient should be carefully taken at intervals of three days, and when there is no more increase, where further increase of weight is desirable, then more food must be given; and first a return to some form of evening meal should be tried. Milk or a farinaceous food with milk is best borne, and if all is well the patient can return to his former habits in regard to eating, and is cured. If, however, as is often the case, this cannot be done, the extra food may be given in the forenoon—*i. e.*, breakfast at 7 A.M. or earlier; lunch at 11 A.M.; dinner at 2 P.M.; in this way as much food can be taken as ever, but without distress.

When from the beginning the distress has been absent at night and severe during the day—as, for instance, where the most serious suffering is experienced after breakfast—breakfast itself must be omitted or reduced to a cup of milk, while dinner and supper are taken as usual, the necessity being for some period of rest continuously in the twenty-four hours of from fourteen to sixteen hours. The lighter cases, where the mid-day meal alone is followed by indigestion, can generally be reached by bromides and a bitter, or by omitting the mid-day meal altogether, even adding additional food at bedtime if the scales show no gain.

How successful this plan of treatment is, how much relief it affords, and how notably the patients gain in weight and spirits, will be realized by anyone who will try it. Crude enforced starvation has always been one of the main remedies of empirics and charlatans in dealing with indigestion, but in the method we have described we believe it to be scientific and valuable.

Cases illustrating the success of this plan, which for want of a better name I might term “digestive rest,” could be given in considerable numbers were it desirable to add to the length of this paper; let it be sufficient to say that in genuine post-influenzal dyspepsia the writer has met with very few failures save where undoubtedly the directions were not followed. Where the case is severe and the patient can be induced to give the plan a three-days’ trial, his own relief will be a sufficient inducement to pursue it as long as is necessary.

Rest, then, of all remedies seems most fitted for the relief of influenza from its onset to its remotest sequel. There seems always to be a deficiency somewhere or other in the power of sustaining voluntary and involuntary exertion, and a tendency to aggravation or relapse on exhaustion. Did time permit, a study might be made from this point of view of other post-influenzal conditions, showing for in-

stance how the peculiar catarrh of the liver is best treated by relieving the liver of work in the shape of foods it cannot manage and of cholagogues it cannot endure; how the influenzal affection of the ocular muscles, which baffles the best-meant efforts of relief with lenses, yields speedily to darkness and disuse of vision; and lastly, how the mania and delusions of influenza are combated most hopefully by those remedies and means which, like opium, enforce sleep continuously for considerable periods of time.



